

Serial No. 10/754,123
Attorney Docket No.: 2003-0270.02
Response to Office Communication

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JUL 28 2008

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

1. (Currently amended) A method for automatically detecting defects in an image scanning device, comprising the steps of:
 - performing a defect calibration scan of an image scanning area;
 - analyzing data produced from the defect calibration scan to detect at least one defect in at least one section of the image scanning area;
 - generating a tag containing information representing the result of the defect detection for each section of the image scanning area having a detected defect; and
 - determining a border of a target image region within the image scanning area based upon the information in the generated tag, the border surrounding the target image region, wherein the border determining comprises ignoring the section of the image scanning area tagged as having a defect; and
 - performing processing on the target image region without processing regions outside of the border of the target image region.
2. (original) The method of claim 1, wherein the defect calibration scan data is performed on the occurrence of at least one of the group of events comprising when the image scanning device is powered up, upon request by a user, and periodically.
3. (original) The method of claim 1, further comprising storing the tag.
4. (original) The method of claim 3, further comprising repeating the steps of performing the defect calibration scanning, analyzing defect calibration scan data to detect for a new defect and a change in any previously detected defect, generating and storing a tag for each new detected defect, and updating the stored tag for each previously detected defect that has changed.
5. (original) The method of claim 1, further comprising automatically compensating for the defect based on information contained within the tag.
6. (original) The method of claim 1, further comprising determining the nature of the defect by recursively dividing the section of the image scanning area tagged as having a defect into subareas and analyzing each subarea in detail.
7. (cancelled) The method of claim 1, further comprising determining whether the section of the image scanning area tagged as having a defect is included in a target image region.
8. (cancelled) The method of claim 1, wherein the border determining comprises ignoring the section of the image scanning area tagged as having a defect.
9. (previously presented) The method of claim 1 wherein the processing comprises autofitting the target image to the image scanning area based upon the border determination.

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10. (previously presented) The method of claim 1 wherein the processing comprises cloning the target image region to produce multiple target images over the image scanning area, based upon the border determination.
11. (previously presented) The method of claim 1, wherein the processing comprises enlarging the target image region to fit across multiple image scanning areas, based upon the border determination.
12. (previously presented) The method of claim 1, further comprising smoothing over the section of the image scanning area tagged as having a defect if that section is determined to be included in the target image region.
13. (original) The method of claim 1, wherein the defect calibration scan is a low resolution scan.
14. (Currently amended) An apparatus for automatically detecting defects in an image scanning device, comprising:
 an analyzer for analyzing data produced from a defect calibration scan of an image scanning area by the image scanning device to detect at least one defect in at least one section of the image scanning area;
 a tag generator for generating a tag for each section of the image scanning area in which the defect is detected;
 a border determiner which determines a border of a target image region within the image scanning area based upon the generated tag, the border surrounding the target image region, wherein the border determiner ignores the section of the image scanning area tagged as having a defect; and
 image processing for processing the target image region without processing the image scanning area outside of the border.
15. (original) The apparatus of claim 14, wherein the defect calibration scan data is performed on the occurrence of one of the group of events comprising when the image scanning device is powered up, upon request by a user, and periodically.
16. (original) The apparatus of claim 14, further comprising a memory for storing the tag.
17. (original) The apparatus of claim 16, wherein the defect calibration scan is repeatedly produced, the analyzer for each repeated scan analyses the calibration scan data to detects a new defect and to detect a change in any previously detected defect, and the tag generator generates a tag for each new defect and updates the tag for each previously detected defect that has changed, and wherein the new tags and updated tags are stored in the memory.
18. (original) The apparatus of claim 14, further comprising a compensator for compensating for the defect based on information contained within the tag.
19. (original) The apparatus of claim 14, further comprising means for determining the nature of

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the defect by recursively dividing the section of the image scanning area tagged as having a defect into subareas and analyzing each subarea in detail.

20. (cancelled) The apparatus of claim 14, further comprising means for determining whether the section of the image scanning area tagged as having a defect is included in a target image region.

21. (Cancelled) The apparatus of claim 14, wherein the border determiner ignores the section of the image scanning area tagged as having a defect.

22. (Previously presented) The apparatus of claim 14, wherein the image processing comprises an autofitter which selectively autofits the target image region to the image scanning area based upon the border of the target image region.

23. (Previously presented) The apparatus of claim 14, wherein the image processing comprises an image replicator which selectively replicates the target image region to produce multiple target images over the image scanning area based upon the border of the target image region.

24. (Previously presented) The apparatus of claim 14, wherein the image processing comprises an image enlarger which enlarges the target image region to fit across multiple image scanning areas based upon the border of the target image region.

25. (Previously presented) The apparatus of claim 14, further comprising means for smoothing over the section of the image scanning area tagged as having a defect if that section is determined to be included in the target image region.

26. (Original) The apparatus of claim 14, wherein the defect calibration scan is a low resolution scan.

27. (Original) The apparatus of claim 14, wherein the analyzer and the tag generator are included in the image scanning device.

28. (original) The apparatus of claim 16, wherein the memory is included in the image scanning device.

29. (original) The apparatus of claim 18, wherein the compensator is included in the image scanning device.

30. (original) The apparatus of claim 14, wherein at least one of the analyzer and the tag generator are included in a host computer connected to the image scanning device.

31. (original) The apparatus of claim 16, wherein the memory is included in a host computer connected to the image scanning device.

32. (original) The apparatus of claim 18, wherein the compensator is included in a host computer connected to the image scanning device.

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33. (previously presented) The apparatus of claim 14, wherein the apparatus comprises a multifunction device having a printer and scanner.

34. (previously presented) The apparatus of claim 14, further comprising a processor, wherein the analyzer and border determiner are performed by the processor.

35. (Previously presented) A method for processing an image, comprising:

performing a defect scan of an image scanning area;

detecting at least one defect in at least one section of the image scanning area;

performing a scan on the image scanning area having a target image region;

determining a border of the target image region within the image scanning area based upon a location of the defect detected, the border surrounding the target image region; and

processing the target image region without processing sections of the image scanning area outside of the border.

36. (Previously presented) The method of claim 35, wherein the processing comprises replicating the target image region over the image scanning area without replicating sections of the image scanning area outside of the border.

37. (Previously presented) The method of claim 35, wherein the processing comprises autofitting the target image region to the image scanning area while ignoring sections of the image scanning area outside of the border.

38. (Previously presented) The method of claim 35, wherein the processing comprises enlarging the target image region to fit across multiple image scanning areas while ignoring sections of the image scanning area outside of the border.